

State of Louisiana
Department of Transportation and Development (DOTD)
Materials and Testing Section Qualification Procedure
For
Qualified Products List 78

**ZINC PAINT SYSTEMS FOR NEW STRUCTURAL STEEL
AND 100% BARE EXISTING STRUCTURAL STEEL**

MATERIAL SPECIFICATION REFERENCE:

DOTD Standard Specifications, Subsection 811, Painting and Protective Coatings
DOTD Standard Specifications, Subsection 1008.

This reference covers two and three coat paint systems utilizing zinc rich primers.

PRELIMINARY REQUIREMENTS:

Coatings systems shall be evaluated for performance through the National Transportation Product Evaluation Program (NTPEP) for Structural Steel Coatings. Submission of products through AASHTO/NTPEP is a continuous process. Manufacturers may submit systems at any time.

After completion of the performance testing and laboratory evaluation the Manufacturer will be required to submit 'baseline' values for each product of the coatings system prior to supplying projects in Louisiana.

Samples (to be furnished at no cost to the Department)

All containers shall be labeled showing the manufacturers brand name, lot number or batch number and date of manufacture.

One pint for each component of paint shall be submitted for wet sample testing.

Product Data Sheets

Include product data sheets to provide all pertinent information relative to the product to be evaluated, including, but not limited to, manufacturer's specifications, mixing instructions, recommended application procedure and rate, typical analysis and Materials Safety Data Sheet (MSDS).

TEST REQUIREMENTS

Laboratory Testing

All tests to be performed in accordance with the requirements of the following:

PROPERTY	TEST METHOD	Specification Acceptance ¹
Pigment Content	ASTM D 2698	Target Value \pm 2.0%
Density	ASTM D 1475	Target Value \pm 0.25 lbs/gal
Solids Content	ASTM D 2369	Target Value \pm 2.0%
Non-volatile in Vehicle Content	ASTM D 2698	Target Value \pm 2.0%
Viscosity, Ku	ASTM D 562	Target Value \pm 5 KU
Dry to Touch	ASTM D 1640	Target Value \pm 10%
Dry Through	ASTM D 1640	Target Value \pm 10%
Sag, Lenetta	ASTM D 4400	Target Value \pm 10%
Infrared Spectrum	ASTM D 2621	²
X-ray Diffraction	ASTM D 2321	²

¹ Target Values shall be established by the Materials Section upon qualification of the paint system.

² Standards for infrared spectrum and x-ray diffraction shall be kept on file and compared to project samples for acceptance purposes.

Performance Evaluation

The performance evaluation shall be performed in accordance with AASHTO R 31. The paint system shall meet the following acceptance criteria.

Blister Value Conversion Table

Blister Size	Blister Frequency			
	Few	Medium	Medium Dense	Dense
#8	9	8	7	6
#6	8	7	6	5
#4	7	6	5	4
#2	6	5	4	3
#1	5	4	3	2

	Zinc Paint Systems	
	Inorganic Zinc Primer	Organic Zinc Primer
Rust Criteria after 5000 hrs exposure to Salt Fog Resistance Test in accordance with ASTM B 117		
Maximum Creep, mm – Evaluated in accordance with AASHTO R-31, Subsection 8.2.2.2.	4	4
Maximum Average Creep, mm- Evaluated in accordance with AASHTO R-31, Subsection 8.2.2.2.	2	2
Maximum length, mm – Evaluated in accordance with AASHTO R-31, Subsection 8.2.2.3.	3	15
Blister Criteria after 4000 hrs exposure to Salt Fog Resistance Test in accordance with ASTM B 117		
Minimum Conversion # - Blistering evaluated in accordance with ASTM D 714. Blister size and frequency converted using blister value conversion table.	8	7
Rust Criteria after 5040 hrs exposure to Cyclic Weathering Resistance Test in accordance with ASTM D 5894		
Maximum Creep, mm – Evaluated in accordance with AASHTO R-31, Subsection 8.2.2.2.	4	12
Maximum Average Creep, mm- Evaluated in accordance with AASHTO R-31, Subsection 8.2.2.2.	2	5
Blister Criteria after 4032 hrs exposure to Cyclic Weathering Resistance Test in accordance with ASTM D 5894		
Minimum Conversion # - Blistering evaluated in accordance with ASTM D 714. Blister size and frequency converted using blister value conversion table.	9	8
Adhesion Criteria - Minimum pull-off strength shall be tested in accordance with ASTM D 4541		
Minimum for both primer and PIT (Primer, Intermediate, Topcoat) panels	2.4 MPa (350 psi)	4.1 MPa (600 psi)
Freeze Thaw Criteria – After 30 freeze/thaw cycles as defined in AASHTO R-31, Subsection 8.6.1 there shall be no loss of adhesion when compared with above adhesion results.		

GENERAL:

Upon completion of the evaluation, the submitter will be notified in writing concerning the results of the evaluation and whether the product will or will not be added to the Qualified Products List. The Department reserves the right to reevaluate any product at any time.

PROJECT ACCEPTANCE REQUIREMENTS:

Qualification of a product is not blanket approval for its use. Final acceptance of each lot or shipment is dependent upon test results which shall conform to the established baseline values for each product.

For project acceptance, all materials shall be sampled according to DOTD Sampling Method S604-00 (Copy attached). All manufacturers are expected to comply with all sampling requirements. Manufacturers should thoroughly review the method prior to submitting any materials for qualification for this list.

REQUALIFICATION:

Any product which has been disqualified and/or removed from the Qualified Products List will be considered for reevaluation only after submission of a formal request along with acceptable evidence that the problems causing the disqualification have been resolved in accordance with the DOTD Materials and Testing Section QPL Handling Procedure.

DOTD MATERIALS AND TESTING SECTION COORDINATOR

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